

**REMARKS/ARGUMENTS****Amendments**

Claim 11 has been amended

- (a) to restrict the claim to packages which are at a temperature of 13-18°C,
- (b) to restrict the claim to at least 4 kg of bananas which have not yet commenced their climacteric (at this stage, the green bananas have not yet shown any color change); and
- (c) to make it clear that the defined packaging atmosphere is substantially constant, i.e. is an equilibrium atmosphere.

Basis for these amendments will be found for example as follows.

- (a) on page 7, line 4, and page 16, line 26;
- (b) on page 3, line 10 ("the later the bananas are picked, the greater the propensity for their climacteric to be triggered..."), and in the Examples, particularly Table 2, which demonstrates the importance of an oxygen content as claimed for the storage of green bananas which are being stored (including transported) at a reduced temperature;
- (c) the specification generally, coupled with the knowledge of those skilled in the art that the respiration rate of green bananas at 13-18°C is such that if green bananas are placed within a sealed container having limited oxygen and carbon dioxide permeability, the packaging atmosphere, after an initial equilibration period, will reach an equilibrium (the oxygen and carbon dioxide contents of that equilibrium being one of the important features of the claim).

Claim 21 is the same as claim 11, as amended, with the following additional restrictions

- (d) the container comprises
  - (i) a polyethylene bag, and
  - (ii) at least one permeable control member which provides a pathway for O<sub>2</sub>, CO<sub>2</sub> and ethylene to enter or leave the packaging atmosphere and

- which comprises a gas-permeable membrane comprising a microporous polymeric film, and a polymeric coating on the microporous film; and
- (e) the packaging atmosphere is free of ethylene which has been added to the packaging atmosphere from a source of ethylene other than the bananas themselves.

Basis for these additional restrictions will be found for example as follows.

- (d)(i) in the specific Examples, all of which make use of polyethylene bags;
- (d)(ii) in claim 12;
- (e) Examples 3 and C 31-33, which make it clear that the initial packaging atmosphere around the bananas is air, with the result that the packaging atmosphere does not contain ethylene from a source of ethylene other than the bananas themselves.

Claim 25, dependent on claim 21, specifies that the container contains only the bananas. Again, basis is in Examples 3 and C 31-33.

### **The Rejections under 35 USC 112**

Applicant respectfully traverses the rejection of claims 11-15 under 35 USC 112, for the following reasons.

1. Applicant has noted Examiner's comments on the time at which the meaning of claim 11 should be assessed, but does not understand why those comments give rise to rejection under the first paragraph of 35 USC 112. Claim 11 simply covers a sealed package having the defined characteristics, including the specified oxygen and carbon dioxide contents. If the package, at any past/future time, did/does not have those characteristics, it was/will be outside the scope of the claim at that time. Insofar as the rejection can be understood, it seems possible that the amendment of claim 11 to specify that the defined packaging atmosphere is substantially constant will overcome the rejection. Thus, the claim does not refer to an atmosphere which exists only for a short period of time as the respiration of the bananas causes the atmosphere to change from one value to another.

2. As noted above, Claim 11 has been amended to make it clear that the bananas have not yet commenced their climacteric, thus overcoming the rejection on this ground.

3. With regard to the Examiner's questions about the permeabilities referred to in claims 11 and 13, it is believed that the following comments will make it clear that the rejection should be withdrawn. The permeability of a sealed container is the sum of the permeabilities of the different parts of the container, and is expressed in units **which are independent of the surface area** of the container (as for example, in claim 11, in ml/atm.24hrs). The permeability of any particular part of a container is the product of the area of that part and the permeability of that part **per unit area** (as for example in ml/m<sup>2</sup>.atm.24hrs, emphasis added, in claim 13). Thus, the two permeabilities, one expressed in units which are independent of area, and the other expressed in units which are dependent on area, do not "represent different properties based on different structural elements".

#### The Rejection under 35 U.S.C. 103

Applicants respectfully traverse the rejection of claims 11-15 under 35 U.S.C. 103 as unpatentable over either EP 752378 (hereinafter "Scolaro") in view of U.S. Patent No. 3,798,333 (hereinafter "Cummin"), or vice versa, both further in view of U.S. Patent No. 3,450,544 (hereinafter "Badran 544"), U.S. Patent No. 3,450,542 (hereinafter "Badran 542"), U.S. Patent No. 4,842,875 (hereinafter "Anderson"), U.S. Patent No. 5,045,331 (hereinafter "Antoon 331") and further in view, U.S. Patent No. 6,013,293 (hereinafter "De Moor"), insofar as that rejection is applicable to the amended claims, for the reasons set out below. Applicant is uncertain what the Examiner means by "Anderson et al. can also be relied on as the primary reference for the reasons given previously", but understand it to mean that the Examiner is also rejecting claims 11-15 under 35 USC 103 as unpatentable over Anderson in view of Scolaro, Cummin, Badran 544, Badran 542, Antoon 331 and De Moor. Applicant respectfully traverses that rejection also, insofar as that rejection is applicable to the amended claims, for the reasons set out below

## General

One of the comments made by the Examiner is that "Applicant has argued each reference separately as if they were applied in a vacuum". Applicant does not agree. In any event, the Examiner will no doubt agree that, as directed by MPEP 2141, the first step in determining whether claims are properly rejected under 35 USC 103 is to (A) determine the scope and content of the prior art, and (B) ascertain the differences between the prior art and the claims. The following comments are, therefore, made on each of the references relied upon by the Examiner.

## Scolaro

In Scolaro's method, "unripe (green) fruit are kept, at room temperature and for a certain period of time, in bags with given characteristics of permeability to gas and aqueous vapor, filled with a modified atmosphere" (column 1, lines 53-57). The modified atmosphere is injected into the bag in place of the air, and contains "oxygen in a quantity ranging from 2% to 20% by volume, preferably from 2% to 6% by volume, carbon dioxide in a quantity ranging from 0% to 20% by volume, preferably from 6 to 13% by volume, ethylene in a quantity ranging from 0% to 3% by volume, preferably from 0.1% to 1.5% by volume, the remainder being nitrogen" (column 2, lines 46-53). The resulting package "can be kept at room temperature for about 2, 3 months, during which time, "the composition of the modified atmosphere remains substantially constant" (column 3, lines 17-20). In Scolaro's only specific example, "one still unripe banana, or two or more bananas" are placed in a bag composed of low density polyethylene 35  $\mu$  thick and having a permeability to oxygen of 6800  $\text{cm}^3/\text{m}^2$  24hr atm, a permeability to carbon dioxide of 22,000  $\text{cm}^3/\text{m}^2$  24hr atm, and a permeability to ethylene of 22,000  $\text{cm}^3/\text{m}^2$  24hr atm (column 2, lines 54-57); these permeabilities were measured by ASTM-D1434 (column 3, line 1), probably at 25°C. The modified atmosphere injected into the bag comprises 2% by volume of oxygen, 8% by volume of carbon dioxide, 0.1% of ethylene and 89.9% of nitrogen (column 3, lines 3-6).

There are at least the following differences between Scolaro and claim 11.

- (1) Scolaro does not disclose a container containing at least 4 kg of bananas.
- (2) Scolaro does not disclose a sealed container having an oxygen permeability at 13° C. per kg of bananas (OP13/kg) of at least 1500 ml/atmosphere .24 hours.
- (3) Scolaro does not disclose a packaging atmosphere which is substantially constant and which contains 14-19% O<sub>2</sub> and less than 10% of CO<sub>2</sub> with the total quantity of O<sub>2</sub> and CO<sub>2</sub> being less than 17%.
- (4) Scolaro does not disclose storing the sealed container at 13-18°C.

With regard to difference (1), there is no stated limit in Scolaro on the quantity of bananas or other fruit to be used. The only specific disclosure in Scolaro is for "one still unripe banana, or two or more bananas" in combination with a bag of 35 micron (0.035 mm) thick low density polyethylene film. A polyethylene film of such thickness is quite easily torn or punctured, and a bag made of such film becomes increasingly impractical as size increases. As a result, a bag large enough to accommodate 4 or more kg of bananas would be impractical. It may be noted that the bags used in the Examples of the present application are almost twice as thick (0.056 mm -- see page 17, lines 10-18). It would of course be possible to use a bag of greater thickness, and therefore greater strength, in Scolaro's procedure (Scolaro mentions a range of 22 to 50  $\mu$  at column 2, lines 44-35), but this would proportionately decrease the oxygen permeability of the bag, and still further emphasize difference (2), as discussed below.

With regard to difference (2), it should perhaps first be noted that the Examiner is mistaken in stating that the oxygen permeabilities of Scolaro cannot be related to those in the claim "because the units are entirely different." The Scolaro's permeabilities are expressed in units of "cm<sup>3</sup>/m<sup>2</sup> 24hr atm" (which are of course the same as the units of "ml/m<sup>2</sup> 24hr atm" used in the present application) and (as explained above in connection with the rejection under 35 USC 112 of claims 11-13) such units can be multiplied by the area of the film to obtain the total oxygen permeability of the film, which in turn can be divided by the weight of the bananas to obtain the oxygen permeability per kg of bananas.

The only specific container disclosed by Scolaro is made of low density polyethylene film 35  $\mu$  thick and having an oxygen permeability of 6800 cm<sup>3</sup>/m<sup>2</sup> 24hr

atm at 25°C. As is demonstrated by the permeabilities for polyethylene films at 13°C and 22°C on page 17, lines 13-14 of this application, the oxygen permeability of polyethylene films at 13°C is about 63% of their oxygen permeability at 22°C; the reduction will be someone greater in relation to a permeability measured at 25°C., as in Scolaro. Scolaro does not give any dimensions for the bags that he uses, but taking Scolaro's Figure (which is approximately life-size) as a guide, it appears that in his specific example, Scolaro used a bag about 11 x 19 cm. in size. Such a bag has a total surface area of about 0.042 m<sup>2</sup> (two surfaces each about 0.11 x 0.19 m) and (at the stated oxygen permeability of 6800 at 25°C) a total oxygen permeability at 25°C of about 285 cm<sup>3</sup> /24 hours. At 13°C, the total oxygen permeability would be about 60% of this value, i.e. about 171 cm<sup>3</sup> /24 hours. For a single banana, typically weighing about 0.2 kg, the OP13/kg would be about 855; for two or three bananas, the OP13/kg would be proportionately lower. For larger quantities of bananas, the bag would of course be larger, but for bags of the size appropriate for larger quantities, the reduction in the OP13/kg is still greater. As noted above, larger bags would also need to be made of thicker material, still further reducing the OP13/kg value.

With regard to difference (3), Scolaro discloses the use of an initial modified atmosphere which is thereafter maintained substantially constant. The widest disclosed range of oxygen content is 2 to 20%; the preferred content is 2 to 6%; the only specifically disclosed content is 2%. There is no disclosure of the claimed range of 14-19% of oxygen.

There is at least the following additional difference between Scolaro and new independent claim 21.

- (5) the container comprises a polyethylene bag and a control member as defined.

### Cummin

Cummin discloses a procedure in which bananas "are packaged as soon after picking as is practicable in a film having a ratio of permeability of carbon dioxide to permeability of oxygen of at least three" (column 1, lines 59-62). The film has "a



permeability to oxygen of at least 1000 ml. /100 in.<sup>2</sup> 24hr atm at 23°C and a permeability to carbon dioxide of at least 3000, and a ratio of the permeabilities of carbon dioxide to oxygen of at least three" (column 2, lines 13-50, and 58-67). Preferably "the ratio of the surface area of the film per weight of bananas is from about 100 in.<sup>2</sup> to about 400 in.<sup>2</sup> per kg of bananas", preferably from 130 to 250 in.<sup>2</sup> per kg of bananas (column 2, lines 32-36). Preferably, "the bananas are gassed with ethylene prior to packaging to trigger the ripening process so that all of the bananas will ripen at about the same predetermined time" (column 2, lines 6-9). In all the specific Examples, three green and ethylene-treated bananas are placed on a polystyrene tray and wrapped with a polymeric film. In Examples I-III, the films had an oxygen permeabilities of 2700, 2100 and 1900 respectively, and good results were reported. In Example IV, the film had an oxygen permeability of 1350 and indifferent results were reported. In Example V, the film had an oxygen permeability of 150, and poor results were reported.

There are at least the following differences between Cummin and claim 11.

- (1) Cummin does not disclose a container containing at least 4 kg of bananas.
- (2) Cummin does not disclose a packaging atmosphere which is substantially constant and which contains 14-19% O<sub>2</sub> and less than 10% of CO<sub>2</sub> with the total quantity of O<sub>2</sub> and CO<sub>2</sub> being less than 17%.
- (3) Cummin does not disclose storing the sealed container at 13-18°C.

With regard to difference (1), although Cummin does not place any explicit limit on the quantity of bananas, his specific Examples are limited to three bananas placed on a polystyrene tray.

With regard to difference (2), Applicant agrees that the atmosphere within Cummin's package will change after it has been sealed. However, even if the packaging atmosphere does pass through a state in which it contains 14-19% O<sub>2</sub> and less than 10% of CO<sub>2</sub> with the total quantity of O<sub>2</sub> and CO<sub>2</sub> being less than 17%, which is not admitted, there is no reason to suppose that such an atmosphere would be an equilibrium atmosphere as required by claim 11. On the contrary, the consistent

teaching of the prior art is that the equilibrium atmosphere should contain much less oxygen. In this connection, Examiner's attention is drawn to the recommendations for oxygen level in Anderson (2-5%), Antoon 331 (2-5%); Badran 542 (less than 7%); Badran 544 (1.4-10%); Scolaro (2-6%); WO 92/02580 (2-5%); and Yahia (2-5%).

There is at least the following additional difference between Cummin and new independent claim 21.

- (6) the container comprises a polyethylene bag and a control member as defined.

#### **Anderson.**

Anderson relates to the "controlled atmosphere storage of fresh fruits and vegetables" including "items, such as ... bananas... routinely picked in a less-than-ripe condition and stored at reduced temperatures" (column 1, lines 10-28). Anderson's invention is to make use of a container which is substantially gas-impermeable except for a panel of a microporous plastic membrane which is "a biaxially oriented film" as specified in column 2, lines 38-53. The panel produces "a flux of O<sub>2</sub> approximately equal to the predicted O<sub>2</sub> respiration rate for not more than 3.0 kg of the enclosed fruit..." (column 2 lines 48-53, and claim 1). Table 1, column 3, states that, for "bananas, ripening", the O<sub>2</sub> respiration rate is 44 cc of oxygen/kg.hr, i.e. 1056 (44 x 24) ml of oxygen/kg.24hr, for a package containing 3.0 kg of bananas, the total respiration rate will be 3168 ml of oxygen/kg.24hr. Table 3 also states that, for "bananas, ripening", the desired atmosphere is 2-5% O<sub>2</sub> and 2-5% CO<sub>2</sub>.

There are at least the following differences between Anderson, and claim 11.

- (1) Anderson does not disclose a container containing at least 4 kg of bananas.
- (2) Anderson does not disclose a sealed container having an oxygen permeability at 13° C. per kg of bananas (OP13/kg) of at least 1500 ml/atm.24 hours.



- (3) Anderson does not disclose a packaging atmosphere which is substantially constant and which contains 14-19% O<sub>2</sub> and less than 10% of CO<sub>2</sub> with the total quantity of O<sub>2</sub> and CO<sub>2</sub> being less than 17%.
- (4) Anderson does not disclose storing the sealed container at 13-18°C.

With regard to differences (1) and (2), it is not entirely clear whether Anderson is concerned only with packages containing less than 3.0 kg of fruits, or whether Anderson's teaching is that if the package contains more than 3.0 kg of fruits, the oxygen flux should be limited to that which is appropriate for 3.0 kg of fruits. Whatever precisely Anderson may mean in this regard, it is clear that Anderson's either does not disclose packages containing more than 3.0 kg of fruits, or teaches that, for a container containing at least 4 kg of bananas, the respiration rate should not exceed the rate required for 3.0 kg of bananas. That rate, according to Table 3 and as explained above, is 3168 ml of oxygen/kg.24hr, i.e. 792 ml of oxygen/kg.24hr, at 21°C; also as explained above, the rate at 13°C will be substantially lower. Claim 11, by contrast, requires a rate (OP13/kg) of at least 1500.

With regard to difference (3), the only instruction in Anderson as to the appropriate atmosphere for bananas is in Table 3, which is entirely different from the requirements of claim 11.

With regard to difference (4), Anderson does not explicitly stipulate the temperature at which his method is to be carried out, but Table 1 refers to 4°C and 21°C; column 6, line 22, refers to "room air"; and all the specific Examples are carried out at 4°C. Thus, Anderson nowhere refers to a temperature in the range required by the claims. As noted on page 2, lines 13-15, of the application, temperatures of 4°C will damage bananas.

#### **The Secondary References.**

**Badran 542**

Like the present application, Badran 542 is concerned with the storage of pre-climacteric bananas at reduced temperature. Badran's objective is to ensure that "the internal gas contents of the bags, after an initial period, can attain equilibria in the range of, by volume, from about 1 to 5.5% oxygen and about 2.5 to about 7% carbon dioxide, with the carbon dioxide content higher than the oxygen content, which will be substantially maintained for a matter of up to about 28 days at a storage temperature between 53° and 70°F..." (column 3, lines 18-34).

As the Examiner correctly supposes, it is likely that at some transitory stage during the equilibration of the packaging atmosphere in Badran's bags from the initial air to the desired equilibrium, the packaging atmosphere will be as defined in claim 11. But Badran teaches directly away from a substantially constant equilibrium atmosphere as defined in claim 11.

#### **Badran 544**

Badran 544 is not concerned with pre-climacteric bananas. The only references in Badran 544 to bananas are to ripe bananas, for which the recommended equilibrium atmosphere is 1.4-2.4%, of oxygen (claim 11).

#### **Antoon 331**

Antoon 331 is very similar to Anderson, except that the panel controlling the flux of the container is composed of a nonwoven material coated with a water resistant resin. ). As in Anderson, Table 1, column 3, states that, for "bananas, ripening", the O<sub>2</sub> respiration rate is 44 cc of oxygen/kg.hr, i.e. 1056 (44 x 24) ml of oxygen/kg.24hr. For a package containing 3.0 kg of bananas, therefore, the total respiration rate will be 3168 (1056 x 3) ml of oxygen/kg.24hr. Table 3 also states that, for "bananas, ripening", the desired atmosphere is 2-5% O<sub>2</sub> and 2-5% CO<sub>2</sub>.

There are at least the following differences between Antoon 331, and claim 11.

- (1) Antoon 331 does not disclose a container containing at least 4 kg of bananas.
- (2) Antoon 331 does not disclose a sealed container having an oxygen permeability at 13° C. per kg of bananas (OP13/kg) of at least 1500 ml/atm.24 hours.
- (3) Antoon 331 does not disclose a packaging atmosphere which is substantially constant and which contains 14-19% O<sub>2</sub> and less than 10% of CO<sub>2</sub> with the total quantity of O<sub>2</sub> and CO<sub>2</sub> being less than 17%.
- (4) Antoon 331 does not disclose storing the sealed container at 13-18°C.

With regard to differences (1) and (2), Antoon 331 is similar to Anderson in that it is not entirely clear whether Antoon 331 is concerned only with packages containing less than 3.0 kg of fruits, or whether Antoon's teaching is that if the package contains more than 3.0 kg of fruits, the oxygen flux should be limited to that which is appropriate for 3.0 kg of fruits. Whatever precisely Antoon 331 may mean in this regard, it is clear that Antoon 331 either does not disclose packages containing less than 3.0 kg of fruits, or teaches that, for a container containing at least 4 kg of bananas, the respiration rate should not exceed the rate required for 3.0 kg of bananas. That rate, according to Table 3 and as explained above, is 3168 ml of oxygen/kg.24hr, i.e. 792 ml of oxygen/kg.24hr, at 21°C; also as explained above, the rate at 13°C will be substantially lower. Claim 11, by contrast, requires a rate (OP13/kg) of at least 1500.

With regard to difference (3), the only instruction in Antoon 331 as to the appropriate atmosphere for bananas is in Table 3, which is entirely different from the requirements of claim 11.

With regard to difference (4), Antoon 331 does not explicitly stipulate the temperature at which his method is to be carried out, but Table 1 refers to 4°C and 21°C; and the specific Examples (which are not concerned with bananas) are carried out at 4°C. Thus, Antoon 331 nowhere refers to a temperature in the range required by

the claims. As noted on page 2, lines 13-15, of the application, temperatures of 4°C will damage bananas.

#### **De Moor**

De Moor discloses a particular type of atmosphere control member. De Moor does not refer to bananas of any kind. Insofar as De Moor is of any relevance, which Applicant denies, the O<sub>2</sub> contents disclosed therein are below the 14-19% requirement of claim 11, namely 1-2% (column 1, line 49, for broccoli) and 5-8% (column 1, line 53, for cherries).

#### **The Rejections under 35 USC 103**

Having regard to the differences noted above between the claimed invention and the references, viewed individually, the burden is on the Examiner to demonstrate that the references, considered together, teach or suggest all the claim limitations, and do so with a reasonable expectation of success (MPEP 2143).

It is Applicant's view that there is no suggestion or motivation in the references, either alone or together, to modify any of the primary references in a way which would lead to the invention claimed in claim 11, still less the invention claimed in claim 21. Indeed the reverse is true. In particular, the references consistently recommend an oxygen content far below the 14-19% range of claim 11 (2-5% in Anderson and Antoon 331; less than 7% in Badran 542; 1.4-10% in Badran 544; and 2-6% in Scolaro); and/or are not concerned with bananas at all (De Moor); and/or make use of containers whose oxygen permeability is far below that required by claim 11 (Anderson, Antoon 331 and Scolaro).

The Office Action asserts, when using Scolaro as the primary reference, *in any case, Cummin, Badran 542, Badran 544, Anderson, Antoon and De Moor all disclose that it was of course notoriously conventional to manipulate*

*permeabilities in accordance with the product, its weight, its respiration rates, and the amount of product and packaging size to provide a reduced O<sub>2</sub> and raised CO<sub>2</sub> level to slow respiration of produce. To modify Scolaro, if necessary, and manipulate the permeability to achieve extended storage life without ripening, which is the object of both Scolaro and Cummin would therefore have been prima facie obvious.*

Applicants do not deny that Scolaro could have been modified by one of ordinary skill in the art in accordance with the teaching of the other references. But that in itself is not sufficient to support the Examiner's apparent conclusion that all such modifications are prima facie obvious. To support a rejection, the modifications suggested by the other references must make good the deficiencies of Scolaro, and have a reasonable expectation of success. The Examiner has not identified where the other references suggest such modifications, and it is Applicant's position that they do not.

The Office Action continues (emphasis added)

*Similarly, Cummin also teaches packaging green bananas in a sealed container with ratios of permeabilities that appear to be in the recited range. It would appear that at least in a short time after packaging, Cummin would have had a gas concentration within the recited range. In any case, it would have been obvious to modify Cummin and employ an oxygen concentration within the recited range for its art recognized and applicant's intended function of slowing down respiration.*

As noted above, even if Cummin's packaging atmosphere does pass through a state in which it contains the amounts of oxygen and carbon dioxide specified in claim 11, which is not admitted, there is no reason to suppose that such an atmosphere would be an equilibrium atmosphere as required by claim 11. On the contrary, one of ordinary skill in the art would expect that Cummin's procedure would be aiming for, and would result in, an equilibrium atmosphere containing much less oxygen, since the consistent teaching of the prior art is that the optimum oxygen concentration is much less than 14-19%. In the second sentence quoted above, beginning "in any case", the Examiner apparently reaches the same conclusion as he did with respect to Scolaro, namely that all

modifications are prima facie obvious. But, as with Scolaro, that cannot be correct, since the references do not employ an oxygen concentration as claimed for any art-recognized function. On the contrary, the prior art recommends much lower concentrations. Applicant does not understand why the Examiner thinks that the "applicant's intended function" is relevant to the rejection, since that information cannot be part of the prior art.

The Office Action then goes on to refer briefly to Anderson, Antoon and De Moor. However, as already noted, these references recommend much lower equilibrium oxygen concentrations, and thus not only fail to provide any relevant art-recognized function for the oxygen concentrations required by the claims, but actually point away from the claimed invention.

The Office Action continues

*In summary, the art taken as a whole fairly teaches one of ordinary skill in the art to derive through routine determinations, the permeability necessary to extend the life of produce, including bananas, as a function of the known variables that are a function of the required permeability needed to retain a certain modified atmosphere within a package to extend storage life. There is nothing magic or secretive in these manipulations. The art fully and clearly teach that by lowering O<sub>2</sub> levels and raising CO<sub>2</sub> levels, and maintaining the modified levels, any produce package, which in a transportable package can be done by employing semipermeable packaging material, the produce will have extended life. The art clearly teaches that each type of produce and even the amount of the same produce and the size of the container will necessitate different but routinely determinable permeabilities.*

Once again, Applicant points out that the prior art consistently points to the desirability of using equilibrium oxygen levels which are far below the 14-19% required by the claims. Therefore, even if the paragraph just quoted is entirely correct, which is not admitted, the claimed invention is not obvious.



Applicant submits that, in view of the facts and arguments set out above, the Examiner has failed to establish a prima facie case for the rejection of claim 11 under 35 USC 103.

### **The Experimental Results**

If, contrary to Applicant's submission, the Examiner maintains that a prima facie case has been made, Applicant will rely upon the experimental evidence in the specification to show that the claimed range of 14-19 % of oxygen achieves unexpected and valuable results relative to the prior art, thus rebutting the prima facie case and establishing the patentability of the invention (MPEP 2144.05 III)

Table 2 on page 23 of this application sets out the results of the experiments described in detail on page 22. In each of these experiments, 18.1 kg of green bananas were placed in a 38 x 50 inch bags of 2.2 mils thick polyethylene. In Example C34, the bags were left open. In Examples C31-33 and 3, the bags were sealed. The sealed bags included different atmosphere control members and, therefore, differed in the extent to which oxygen could enter the bag. The bags were maintained at 13°C for 36 days after packing, at which time half the sealed bags in each of Examples C31-33 and 3 were opened, and all the bags were placed in a commercial ripening room for about 24 hours (i.e. in an atmosphere containing ethylene at a concentration of 500 to 1000 ppm -- see page 14, lines 16-17). The bags of bananas were then stored until 49 days after packing, at which time the bags which were still sealed were opened, and the bananas inspected. As shown in Table 2, the oxygen content within the sealed bags 23 days after packing was 8.6% in Example C31, 9.8% in Example C32, 12.7% in Example C33, and 15.5% in Example 2; although not specifically so stated in Table 2, the oxygen content in the open bags of Example C34 was of course atmospheric, i.e. about 21%. The quality of the bananas, at the end of the tests, was excellent in the example of the invention (Example 3), in which the oxygen content was within the 14-19 % range of claim 11, but unsatisfactory in the comparative Examples, in which the oxygen content was lower (Examples C31-33) or higher (Example C34).

**Continuation Application(s)**

For the record, Applicant notes that it is his intention to file one or more continuing applications to claim the aspects of the invention disclosed in this application and not specifically claimed in the present claims. In this connection, attention is directed to the eleven aspects of the invention disclosed in the Summary of Invention on pages 4-9 of the application, and the associated disclosure in the Detailed Description of the Invention, including the specific Examples, on pages 10-32 of the application

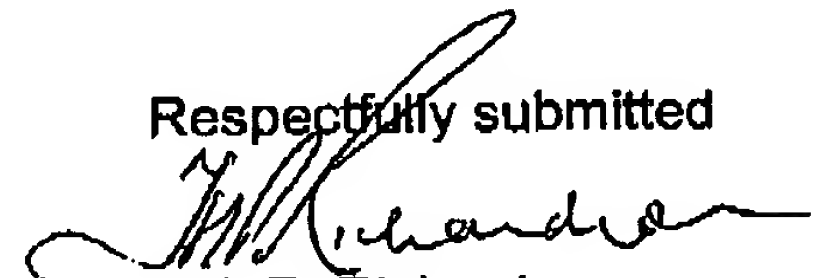
**Request to Return Signed Information Disclosure Statements**

Applicant filed Information Disclosure Statements on 4/26/2002, 5/17/2002, 1/8/2003, and 5/13/2003, and, in response to the request in the Office Action mailed 3/30/2004, filed duplicate copies of those IDSs and documents (delivered directly to the Examiner as he requested) on or about 8/16/04 (as noted on page 1 of the Reply mailed 8/16/04). The Examiner is asked to sign and return the Information Disclosure Statements

**CONCLUSION**

It is believed that this application is now in condition for allowance, and Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If, however, there are any outstanding issues that could usefully be discussed by telephone, the Examiner is asked to call the undersigned.

Respectfully submitted



T. H. P. Richardson

Registration No. 28,805

Tel No. 650 854 6304